

REMARKS

Applicants have amended claims 1 and 16 and canceled claims 19 and 20. Claim 16 has been amended to clarify the claimed subject matter. Claims 1-8 and 11-18 are presented for further examination. No new matter has been added.

Claim Objections

The Office action objected to claims 17-20 under 37 CFR § 1.75(c) as being of improper dependent form. In particular, the Office action asserted that these claims “are process claims that improperly depend on a product claims.” Applicants have canceled claims 19 and 20 for reasons unrelated to this objection.

Applicants respectfully submit that claims 17 and 18 are in proper dependent form. As stated in the MPEP, “[t]he fact that the independent and dependent claims are in different statutory classes does not, in itself, render the latter improper.” *See* MPEP § 608.01(n) (“Thus, if claim 1 recites a specific product, a claim for the method of making the product of claim 1 in a particular manner would be a proper dependent claim since it could not be infringed without infringing claim 1.”) Accordingly, Applicants respectfully request that this objection be withdrawn.

Claim Rejections

The Office action rejected claims 1-8 and 11-16 under 35 U.S.C. § 103 as unpatentable over *New Type Sportswear Fabrics “Zebra” from Toyobo and Itochu*, JTN Monthly (“Zebra”) in view of the Background of the instant application.¹ Applicants respectfully submit that the rejection is misplaced, particularly in light of the instant amendments to claim 1.

The Office action argues that the Zebra reference discloses a fabric with the following features:

¹ Although the Office action purports to reject claims 1-8 and 11-16 based on this combination of references, it appears to rely on the background of the instant application in connection with its rejection of claims 11 and 12 only. The Office action does not rely on the background of the instant application with respect to any of the features of claim 1.

- a 33 dtex yarn for the warp and a 41 dtex yarn for the weft;
- a weight of 60 grams per square meter of ripstop fabric;
- tearing strength of 18.6 N in the warp cut direction and 9.8 N in the weft cut direction;
- air permeability of 0.6 cm³/cm²·s;
- although the claimed bending rigidity, fabric thickness and lip width **are not disclosed**, they “are all fabric properties that are directly related to the [foregoing] fabric properties . . . of Zebra.”

(Office action at 2-3)

To summarize, compared to features of claim 1, the fabric disclosed in the Zebra reference:

- has a warp yarn that is **10% thicker** than the maximum claimed;
- has a weft yarn that is **43% thicker** than the maximum claimed;
- has a weight that is **10% heavier** than the maximum claimed;
- despite being a heavier fabric with thicker yarn, has a tear strength in the weft cut direction that is **2% weaker** than the minimum claimed; and
- **does not disclose** the claimed fabric thickness, lip width or single side calendaring.

The Office action attempts to overcome these deficiencies in the Zebra reference by arguing that (1) the claimed parameters that are different from the Zebra reference are merely “obvious variation[s]” and (2) the claimed parameters that are not disclosed in the Zebra reference are inherent. (Office action at 3) Applicants respectfully disagree with the conclusion of unpatentability. In fact, the Office action fails to make even a *prima facie* case of obviousness. *See* MPEP § 706.02(j).

As an initial matter, the Office action’s position that differences in the “basis weight” and yarn linear density are mere “obvious variation[s]” is misplaced. The particular weight and yarn linear density are claimed along with minimum tear strengths. One of ordinary skill in the art

recognizes a direct relationship between weight/yarn linear density and tear strength. Claim 1, however, recites high tear strength combined with low weight and yarn linear density. This combination is not disclosed the Zebra reference which instead discloses a heavier fabric with thicker yarns, yet is **weaker** than the fabric claimed. The Office action's implicit argument that one may simply **choose** to decrease weight and yarn linear density while maintaining high tear strength is misplaced. (*See* Applicants' comments in prior response) Applicants' claim 1 describes a product whose combination of features is neither disclosed nor rendered obvious by the Zebra reference.

The Zebra Reference Fails to Disclose the Claimed Weight, Yarn Linear Density and Thickness

The Zebra reference discloses that the finished density per inch of fabric is 200 threads for warp and 150 threads for weft, similar to the examples discloses in the instant application. However, since the fineness of each yarn in fabric disclosed in the Zebra reference is significantly larger than what is claimed, Applicants submit that the result will be a dense, thick, and heavy woven fabric. This is confirmed by the fact that the fabric of the Zebra reference is significantly heavier than the fabric of described in claim 1 (60 g/m^2 versus the claimed 50 g/m^2).

Also, contrary to the Office action's assertion of inherency (for which it offers no support), Applicants submit that the fabric disclosed in the Zebra reference does not have a thickness of "0.07 mm or less" because the fabric is far heavier than claimed and includes threads far thicker than claimed. In that regard, Applicants respectfully submit that the Examiner has not met the burden of proving inherency. *See* MPEP § 2112 ("In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original)). If the Examiner maintains this rejection, Applicants request that the subsequent Office action provide a basis in fact and/or technical reasoning.

The Zebra Reference Fails to Disclose the Claimed Lip Width, Single Side
Calendering and the Unexpected Properties That Arise as a Result

The Office action asserts that the claimed lip width is inherent in the fabric disclosed in the Zebra reference. (Office action at 3) Again, the Office action fails to provide any basis in fact and/or technical reason for its conclusion of inherency. Applicants' submit that the Examiner cannot make such a showing because Applicants believe that the claimed lip width, along with other claimed features (e.g., single side calendering), yield the unexpectedly high claimed tear strength despite the low claimed weight and yard linear density. Applicants request that the subsequent Office action provide a basis in fact and/or technical reasoning for this alleged inherency if this rejection is maintained.

Generally speaking, calendering is a process of passing a fabric between a heating roll and a cooling roll. Calendering can be done for numerous reasons, including, for example, minimizing the space between fibers and thereby reducing the air permeability and giving a glossy finish. In claim 1, only one side is calendered. The calendering process lends significant structural differences to the claimed fabric which, in combination with other claimed features, yield the unexpectedly high claimed tear strength despite the low claimed weight and yard linear density. It is improper for the Office action to ignore these structural differences, which necessarily exist because the Zebra reference fails to disclose single-side calendering. *See* MPEP § 2113.²

As a result of this process, the rip stop weave of the processed surface is compressed to some degree, and the intersection of the rip stop lattice becomes a so-called "restraint point." By setting the rip widths of the longitude and latitude thereof each 5 mm or less (as claimed), the intervals between such restraint points become smaller, and the number of restraint points per unit area increases. Since the increased number of restraint points leads to a reduced load of the

² "The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product." MPEP § 2113 (*citing In re Garnero*, 412 F.2d 276, 279 (C.C.P.A. 1979) (holding "interbonded by interfusion" to limit structure of the claimed composite and noting that terms such as "welded," "intermixed," "ground in place," "press fitted," and "etched" are capable of construction as structural limitations.)).

heating roll on one intersection of the lattice in processing, Applicants believe that flexibility of the restraint points can be maintained. Applicants also believe that the fiber becomes easier to slip at the restraint points and the fabric itself becomes more flexible to bend against instantaneous stress, and the tear strength becomes unexpectedly high. (*See, e.g.*, Application at ¶ [0031])

If shearing stress is applied to an inflexible cloth in the direction perpendicular thereto, the shearing force is applied in the direction perpendicular to the fiber axis direction of the yarn, easily tearing the yarn. On the other hand, if the fabric is flexible, *e.g.*, as the result of single side calendaring, the yarn bends practically instantaneously upon application of stress and the shearing stress is dispersed into the direction of the fiber axis and directions perpendicular to the fiber axis direction. Therefore, the fabric exhibits unexpectedly high tear strength. (*See, e.g.*, Application at ¶ [0026])

The Zebra reference does not disclose how large a lip width can improve the tear strength. In addition, the Zebra reference does not describe the fact that the tear strength is improved by single side calendaring. This is not surprising since the fabric disclosed in the Zebra reference exhibits far less advantageous properties (*e.g.*, greater weight and lower tear strength).

Accordingly, the Zebra reference fails to disclose or render obvious the subject matter of claim 1 at least because the fabric disclosed in the Zebra reference (1) has a warp yarn that is 10% thicker than the maximum claimed, (2) has a weft yarn that is 43% thicker than the maximum claimed, (3) has a weight that is 10% heavier than the maximum claimed, (4) despite being a heavier fabric with thicker yarn, has a tear strength in the weft cut direction that is 2% weaker than the minimum claimed and (5) does not disclose the claimed fabric thickness, lip width or single side calendaring. Applicants respectfully submit that a person of ordinary skill in the art, having reviewed the Zebra reference, would not have been able to obtain a fabric having the claimed properties.

Applicants therefore respectfully request allowance of claim 1. Dependent claims 2-8 and 11-18 recite additional features and are independently patentable.

Conclusion

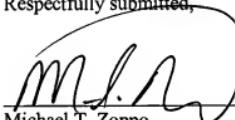
It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper.

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